

**IN THE DRAWINGS:**

Please replace Figures 4 and 5 with the attached drawings. The corrected drawings serve to correctly identify in Figure 5 the centroid that was accidentally misidentified in Figure 4. No new matter is added by the acceptance of the attached drawings.

**IN THE CLAIMS:**

Please rewrite claim 20 as set forth below in clean form. Additionally, in accordance with 37 CFR 1.121 (c)(1)(ii), amended claim 20 is set forth in a Marked Up Version in the pages attached to this amendment.

---

20. An image processing system comprising:

- a sensor for capturing an image of a seat area;
- a segmentation subsystem for extracting a segmented image of an occupant from an ambient image of a seat area;
- an ellipse fitting subsystem which fits an upper ellipse to the upper torso of an occupant, a lower ellipse to the bottom portion of an occupant, and a centroid in said upper ellipse;
- a tracking and predicting system, further comprising a shape tracker and predictor and a motion tracker and predictor; and
- an at-risk-zone intrusion indicator, wherein said at-risk-zone intrusion indicator determines which point on the upper ellipse is closest to the airbag, and wherein said at-risk-zone intrusion indicator informs the airbag controller whether the occupant will be in a position within a predefined danger zone by the time the airbag is deployed;
- wherein said shape tracker and predictor tracks and predicts predefined shape characteristics using a Kalman filter equation for each predefined shape state, and wherein said shape tracker and predictor weighs each Kalman filter using the predefined probabilities associated with said shape states, to generate an overall prediction for each said shape characteristic; and